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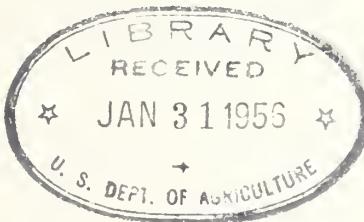
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A STUDY OF THE INFLUENCE OF REIMBURSEMENT PAYMENTS ON THE
PRICING POLICIES OF SCHOOLS IN TENNESSEE PARTICIPATING IN
THE SPECIAL SCHOOL MILK PROGRAM

This report summarizes the findings and conclusions of one in a series of studies of the Special School Milk Program undertaken by State educational agencies in cooperation with the United States Department of Agriculture, Agricultural Marketing Service. Funds to conduct these studies were made available by the Commodity Credit Corporation to permit the appraisal and development of new and more effective methods of increasing the availability and consumption of milk in schools.

This study was undertaken by the Tennessee Department of Education in the fiscal year 1955. Supervising the study was Frances M. Nave, State Supervisor, School Lunch Program, Tennessee Department of Education. E. J. Long, who served as consultant and M. Lloyd Downen, who conducted the study, are with the Department of Agricultural Economics, Agricultural Experiment Station, University of Tennessee.

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THE SPECIAL SCHOOL MILK PROGRAM

Purpose of Study

To determine (1) the influence of reimbursement payments upon the pricing policies of participating schools, and (2) the influence of special pricing policies on milk consumption under the Special School Milk Program. Secondary material developed during the course of survey included: a study of the relationship between the availability of milk and increased consumption; relative increases in consumption as between rural and urban schools; relationship between the serving of free lunches and increased milk consumption.

Procedure for Conduct of Study

A random sample of schools participating in the Special School Milk Program in February 1955, was selected. Data were obtained from 308 of these schools through visits by field agents. In addition, basic data were obtained from records in the State office of the School Lunch Program, and from unpublished records of a study made of milk consumption in all Tennessee public schools operating lunch rooms.

The sample was selected in such a manner as to provide for proportionate representation by schools as follows:

1. Schools with high consumption bases which participated in both the Special School Milk Program and the School Lunch Program. (Much of the analysis consists of comparison of consumption for the period under study with a "base" period -- the average consumption for the months of October 1953 and March 1954.)

2. Schools with low consumption bases which participated in both the Special School Milk Program and the School Lunch Program.

3. Schools with bases participating only in the Special School Milk Program.

4. Schools without bases, participating only in the Special School Milk Program.

Conclusions

1. In March 1954, schools participating in the National School Lunch Program showed a higher daily per capita rate of milk consumption than did schools which were not participating, 0.72 half pints of milk compared to 0.51 half pints. In February 1955, the period under study, students in schools with high bases participating in both the Special School Milk Program and the National School Lunch Program increased their milk consumption level by 42 percent over their average base, while schools with low bases increased average daily per capita milk consumption by 50 percent over base. Schools with no bases and participating only in the Special School Milk Program had a milk consumption level of 0.81 half pints per child per day, compared with 0.62 half pints for students in schools which had bases and which were participating in the Special School Milk Program only.

2. A two-price system (regular price for first half pint and reduced price thereafter) resulted in larger percentage increases than did a one-price system in schools participating in both the Special School Milk Program and the School Lunch Program. A one-price system brought about higher percentage increases in schools participating in the Special School Milk Program only.

3. The larger the price reductions, the larger were the increases in milk consumption in high base schools. In low base schools, there

appeared to be little relationship between the amount of the reduction and the increase in consumption.

4. The availability of milk before school and in combination with other times of service resulted in greater milk consumption than in those schools which did not make milk available before school opened.

5. Rural schools with a high base increased consumption by 46 percent, compared with an increase of 38 percent for those schools which were entirely urban or were composed of students from both rural and urban areas. In the group of schools with low consumption bases, rural schools increased consumption by 55 percent compared with a 46 percent increase for those schools that were entirely urban or combinations of urban and rural.

Analysis of Data

1. Milk Consumption in Tennessee Schools

Average consumption of milk per student daily in March 1954, in 1,942 Tennessee schools with lunch rooms was 0.67 half pints. Average consumption of milk per student daily in those schools participating in the National School Lunch Program amounted to 0.72 half pints compared with 0.51 half pints for those not participating in the School Lunch Program.

Average consumption of milk per student per day during February 1955, amounted to 1.15 half pints in the group of schools with high consumption bases or an increase of 42 percent above base. In schools with low consumption bases average consumption of milk per student per day was 0.70 half pint or a 50 percent increase. For those schools with bases participating in the Special School Milk Program but not in the National School Lunch Program, milk consumption per student per day was 0.62 half pint, and 0.81 half pint in those schools with no bases.

2. Relationship of the Pricing Method to Consumption

Schools generally used reimbursement payments in one of two ways to reduce the cost of milk to students - reduce the price of all milk served in the school (one-price system) or charge the regular price for the first half pint and lower prices for additional milk (two-price system). For the schools which were participating in both the National School Lunch Program and the Special School Milk Program, the use of a two-price system resulted in larger percentage increases than did a one-price system. The opposite was true for those schools participating in the Special School Milk Program only. (Table I)

Table I. Milk consumption per student per day and increase in consumption from base, by school groups and according to pricing method used, Tennessee, February 1955.

School Group	: Number of Schools	: Consumption Per Student Per Day Half Pints	: Increase in Consumption Over Base (Number) (Percent)
<u>NSLP & SSMP a/</u>			
High Consumption Bases	116	1.15	42
One-Price System b/	49	1.08	39
Two-Price System c/	67	1.21	44
Low Consumption Bases	107	0.70	50
One-Price System b/	58	0.70	45
Two-Price System c/	49	0.70	57
SSMP Only with Bases	58	0.62	62
One-Price System b/	32	0.55	112
Two-Price System c/	26	0.70	36
No Bases	27	0.81	--
One-Price System b/	14	0.97	--
Two-Price System c/	13	0.62	--

a/ NSLP - National School Lunch Program.

SSMP - Special School Milk Program.

b/ One-price system - Same price charged students for all milk.

c/ Two-price system - Regular price charged for first half pint; lower price for all additional milk.

It was expected that the larger the reduction in the price of milk to students, the greater would be the increase in milk consumption. This was realized in the group of schools with high consumption bases. However, in the group of schools with low consumption bases, there appeared to be little relationship between the amount of the reduction in price and the increase in consumption. (Table II)

Table II. Relation between reduction in the price of milk to students and increase in milk consumption over base, and milk consumption per student per day, in high base and low base schools participating in the National School Lunch Program as well as the Special School Milk Program, February 1955.

Reduction Per Half Pint (cents)	Schools (Number)	Consumption Increase From Base (Percent)		Consumption Per Student Per Day -- Half Pints (Number)	
		High Base	Low Base	High Base	Low Base
0.9 and less	10	18	25	59	1.04
1.0 - 1.9	13	11	37	85	1.32
2.0 - 2.9	11	10	42	40	1.00
3.0 - 3.9	39	30	42	27	1.13
4.0 and over	37	33	51	59	1.18
Incomplete data	6	5	--	--	--
Total	116	107	42	50	1.15
					0.70

Prices paid by schools to dairies for milk ranged widely, but most paid 5.0 or 5.5 cents per half pint during February 1955. At each level of price paid by schools there was a wide range in the weighted average prices paid by students. This could be attributed in part to differences in the increase in consumption above bases among schools.

Relationship of Times of Service to Milk Consumption

"There was wide variation among schools in the number of times that milk was available to students. Some schools made milk available during the lunch period only. Other times that milk

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was made available in some schools included before school, morning recess, afternoon recess, after school, various combinations of the preceding and in some schools milk was available at all times. In neither the schools with high consumption bases nor those with low consumption bases did there appear to be any relationship between the number of times that milk was available and increased milk consumption. However, there appeared to be combinations of times that milk was available which were more effective than others. Those schools with high consumption bases which made milk available before school and in combination with any other times, experienced an increase of 49 percent in milk consumption compared with a 40 percent increase for those schools not making milk available before school. Those schools with low consumption bases which made milk available before school and in combination with any other times, experienced an increase of 60 percent compared with a 48 percent increase for those schools not making milk available before school."

Other Items Noted in Milk Consumption Trends

The study revealed that milk consumption increased more in rural schools than in urban or in rural-urban schools. In rural schools with high consumption bases, the increase amounted to 46 percent over base, compared with a 38 percent increase for high base schools that were urban or rural-urban in character. In the case of rural schools with low base consumption, the increase amounted to 55 percent over base, compared with 46 percent for urban or rural-urban schools with a low base.

There were several factors that adversely affected milk consumption. One was lack of refrigeration space, particularly in the smaller schools. This was coupled with the inability of many smaller schools to obtain daily milk deliveries.

According to the authors of the report, "The second factor was the lack of interest in the Special School Milk Program by personnel in some schools."

